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## Food and Feed Conservation

CLINTON P. ANDERSON

*Secretary of Agriculture*

**T**HE PEOPLE of America now face a history-making test. All of us are being asked to cut down on our use of grains and grain products, and of meat and poultry products, in order that millions of men, women, and children in war-scarred Europe may be spared outright starvation this winter. We are asked to conserve on the use of these foods voluntarily, immediately, and all together as a unified team. We cannot fail to respond as the need demands. We cannot fail this great test of the good and generous spirit of the American people.

Farmers, processors of food products, and consumers in the cities are already working in the Nation-wide campaign of food conservation requested by President Truman and the Citizens' Food Committee. Farmers are asked especially to put their shoulders to a real feed conservation campaign—a campaign to save grain through more efficient livestock feeding practices.

Farmers and ranchers, through more efficient use of livestock feeds, will make a real contribution toward increasing the volume of grain for export. That is the prime objective of the feed conservation campaign. At the same time, holding down the use of high-

priced grain will mean important savings to farmers.

Practical suggestions for more efficient livestock feeding are being made available to farmers and ranchers through the field organization of the U. S. Department of Agriculture, and through State agricultural colleges and farm organizations. A fact sheet of specific suggestions has been prepared for the use of these agencies.

There are many ways in which farmers and ranchers might save grain. I am told that for every reduction of one pound in the average weight of all hogs marketed in the United States, there is a saving of 7 million bushels of grain. That is a powerful argument for holding down the average weight of hogs marketed. In addition to marketing hogs at lighter weights, feeders also can save grain by using the proper amount of protein feed, keeping hogs on pasture as much as possible, and avoiding death losses.

Large amounts of grain and byproduct feeds are used annually in the Corn Belt to fatten cattle beyond the average of the good slaughter-grade. Inasmuch as a large part of the increase in weight obtained by feeding cattle to higher grades is weight in the form of fat, I think that feeders should not now aim at the top grades. Hay supplies are abundant and cattle can be fed more hay and less grain this year. Maxi-

mum use also should be made of pastures. In these ways, valuable grain can be saved for human consumption.

Dairy farmers can save grain by feeding good quality hay and other roughage heavily, with economy and efficiency. Grain feeding of dry cows can be held to a minimum if the cows are in good condition and the hay available is a legume of good quality. Pastures should be utilized to the fullest extent.

As for poultry, the U. S. Department of Agriculture already has suggested that poultrymen cull their flocks to obtain an over-all reduction in layers amounting to 4 percent. Even with that reduction, which will save grain, it will be possible to produce 375 eggs

per capita in 1948—the third largest per capita supply on record. Further savings in grain can be made by poultrymen using more green feeds, keeping flocks healthy, and reducing the mortality rate.

The supply of all feed concentrates per animal unit is estimated at 1.03 tons in 1947-48. This compares with the 1942-46 average of 1.07 tons and the 1937-41 average of 0.03 tons. Hay supplies are favorable. The supply per hay-consuming animal is expected to be the largest on record.

All of us can contribute to the saving of food and feed that is necessary to relieve human suffering.

## Why High Food Prices?

**F**OOD prices are at their present high levels mainly because of the strong demand for food for domestic consumption and for export. Our food production this year is 40 percent above 1935-39 and 22 percent above the high of 1941. Our food supplies this year are actually larger than last year, because of a rise in imports.

The American people are eating more and better foods than prewar. They've got money and jobs—and they want and are willing to pay for good foods. Also, as they still cannot buy many of the nonfood items they want, they are spending more of their purchasing power on food than they otherwise would. They are spending about 28 percent of their disposable income on foods, compared with 22 or 23 percent before the war. If the American people as a whole today were satisfied with the same kinds and amounts of food as they bought before the war they would be spending only 21 percent of their disposable income for food. Despite higher prices, our people at home are eating 8 percent more food per person than in 1941 and 17 percent more than their 1935-39 average. These figures reflect changes in the quality of foods consumed, as well as in quantities.

Besides the strong demand at home, export demand is very active. The food situation in Europe has been on the down grade since 1945. The United

States in 1946-47 exported to Europe some 11.7 million long tons of food, of which about 9.4 million tons were grains and grain products. In tonnage terms, total exports made up 8 percent of total food supplies in the United States in 1946-47. When foods are combined in terms of their values at 1935-39 farm prices, exports amounted to 8 percent of total food disappearance. The European food situation is expected to be more serious in 1947-48 than in the past 2 years. The great need for food supplies from the United States continues.

From the standpoint of consumer budgets, prices of some foods have risen alarmingly during the past year or so. Butter prices are high, and butter consumption per capita is 4 pounds below the 16-pound average for 1941. But butter production itself is 22 percent under 1941, principally because much more milk is being used as fluid milk.

Meat supplies have appeared to be short at times. But the fact is that our people are eating as much meat per capita as last year, on the average, and about 9 percent more than in 1941.

Egg prices have gone up, largely because some of the heavy demand for meat has shifted to increased pressure on egg supplies. Egg consumption this year will average about one-fifth higher than in 1941.

MARGUERITE C. BURK  
*Bureau of Agricultural Economics*

## Feed Supplies for the Year Ahead

**F**ARMERS will have much less feed grain for livestock during the 1947-48 feeding season (October-September) than the large quantities available in the season just past. The reduced corn crop this year will be largely responsible for the smaller supplies, although the oats and grain sorghums crops also are below 1946.

Because of the smaller feed grain supply, farmers won't be able to feed their livestock and poultry as heavily as in 1946-47, especially in the feed-deficit areas. There will be less corn for food and industrial use than in the season just ended. Corn exports will

be small during the coming year, whereas they were very large during 1946-47.

The total supply of all feed concentrates (feed grains, byproduct feeds, and wheat and rye to be fed) is about 13 percent smaller for 1947-48 than for last year. It is 10 to 20 percent smaller than for any of the past 5 years. However, the supply is a little above the average 1937-41. This year's production of feed grains, at around 98 million tons, is nearly one-fourth less than last year. This reduction is partly offset by larger carry-over of old-crop corn this year than last and

### Feed supply and utilization, livestock numbers, and feed per unit of livestock, United States, years beginning October 1937-47

Item	Average 1937-41	1942	1943	1944	1945	1946 <sup>1</sup>	1947 <sup>2</sup>
	Million tons	Million tons	Million tons	Million tons	Million tons	Million tons	Million tons
<b>Supply:</b>							
Stocks beginning of crop year <sup>3</sup>	16.9	18.5	<sup>3</sup> 17.8	11.6	14.9	10.9	14.0
<b>Production:</b>							
Corn	72.1	85.9	83.0	86.5	80.7	92.1	68.9
Oats	18.1	21.5	18.2	18.4	24.6	21.1	19.7
Barley	6.9	10.3	7.8	6.6	6.4	6.3	6.8
Sorghum grain	2.2	3.1	3.1	5.2	2.7	3.0	2.4
Total feed grains produced	99.3	120.8	112.1	116.7	114.4	125.5	97.8
Other grains fed <sup>4</sup>	4.8	15.1	16.0	10.8	8.4	6.4	10.0
Byproduct feeds for feed	15.4	18.6	18.8	19.3	17.8	19.5	19.0
Total supply of concentrates	136.4	173.0	164.7	158.4	155.5	162.3	140.8
<b>Utilization:</b>							
Domestic feed grains fed	85.4	109.0	104.4	99.4	107.6	102.0	-----
Domestic wheat and rye fed	4.6	12.2	9.6	8.4	8.2	6.3	-----
Other grain fed	.2	2.9	6.4	2.4	.2	.1	-----
Oilseed cake and meal	3.9	6.1	6.3	6.2	5.8	5.8	-----
Animal protein feeds	2.9	2.9	2.8	2.6	2.5	2.5	-----
Other byproduct feeds	8.6	9.6	9.7	10.5	9.5	11.2	-----
Total concentrates fed	105.6	142.7	139.2	129.5	133.8	127.9	120.0
Feed grains for seed, human food, industry, and export	11.8	13.1	12.6	15.0	13.1	18.7	13.6
Total utilization	117.4	155.8	151.8	144.5	146.9	146.6	133.0
Total utilization adjusted to crop-year basis	116.5	156.8	153.1	143.5	144.6	148.3	132.8
Stocks at end of crop year <sup>3</sup>	19.9	<sup>3</sup> 16.2	11.6	14.9	10.9	14.0	8.0
Number of grain-consuming animal units January 1 following (million) <sup>5</sup>	132.8	160.7	172.6	147.6	146.6	138.0	137.0
Supply of all concentrates per animal unit	1.03	1.08	.95	1.07	1.06	1.18	1.03
Utilization of all concentrates for feed per animal unit	.79	.89	.81	.88	.91	.93	.88

<sup>1</sup> Preliminary. Subject to change as additional data become available.

<sup>2</sup> Based on indications Sept. 1.

<sup>3</sup> Stocks of corn Oct. 1 and oats and barley July 1; stocks on farms and at terminal markets 1937-42. Stocks in all positions, including interior mill, elevator, and warehouse stocks, 1943 to date.

<sup>4</sup> Imported grain and domestic wheat and rye fed.

<sup>5</sup> Stocks at the end of the 1942-43 marketing year, excluding grain at interior mills, elevators, and warehouses, are used in computing 1942-43 disappearance.

<sup>6</sup> Grain-consuming animal units weighted as follows: milk cows, 1.00; other cattle, 0.51; hogs, 0.87; sheep, 0.04; horses and mules 1.14; chickens, 0.045.

prospects for heavier feeding of wheat from the record 1947 crop. Our carry-over of old corn on October 1 was about 290 million bushels, compared with only 173 million bushels in 1946. At the beginning of the marketing season, it appeared likely that much more wheat would be fed to livestock than the 187 million bushels fed last season. Supplies of byproduct feeds will be about as large as the near-record of the past 12 months.

Feed concentrate supplies per animal unit are only a little smaller for 1947-48 than during the past 5 years. And livestock numbers have been falling off since 1944, with the result that the number of grain-consuming animal units on farms is about one-fifth below the peak of 1944.

Because of the poor planting season this year, our corn acreage is nearly 4 million acres below 1946. Also, we had too much dry weather in the Corn Belt in late July and most of August. These conditions have held the corn crop down to only about 2,459 million bushels, smallest since 1940. This year's crop, plus the October 1 carry-over of about 290 million bushels, will give us a total supply of about 2,750 million bushels for the present season. This is about 700 million bushels under

last season and about one-fifth below the 1942-46 average. On the other hand, it is a little above the average for the 15 years just before the war.

Much of the cut in the corn crop this year came in the Corn Belt. The crop for the whole North Central region was about 1,806 million bushels, down one-fourth from the five-year average. This area also raises much livestock. Its smaller corn supplies may cause farmers to feed their hogs to lighter weights in 1948 and to trim down on feeding of dairy cows and poultry.

As this region also sells about 80 percent of all the corn sold as grain, its smaller production will materially cut farm sales of 1947 corn. Sales may be one-third or more below the record of 1946-47.

Favorable weather during September and early October greatly reduced the soft corn hazard over much of the Corn Belt. As a result not much more corn than usual will be soft or wet, and will be only a minor problem this year. The percentage of the crop harvested for grain is expected to be a little smaller than usual. The total quantity of grain harvested is expected to be less than 2.2 billion bushels, compared with about 3.0 billion bushels last year.

The total supply of byproduct feeds

### Corn supply and utilization, year beginning October, average 1937-41, and annual 1943-47

Item	Average 1937-41	1943	1944	1945	1946 <sup>1</sup>	1947 <sup>1</sup>
	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels
<b>Supply:</b>						
Production	2,576.4	2,466.0	3,088.1	2,880.9	3,287.9	2,459
Carry-over <sup>2</sup>	468.6	384.1	231.0	315.3	172.9	290
Imports <sup>3</sup>	1.0	3.7	6.1	.6	.5	1
<b>Total supply</b>	<b>3,046.0</b>	<b>3,353.8</b>	<b>3,325.2</b>	<b>3,196.8</b>	<b>3,461.3</b>	<b>2,750</b>
<b>Utilization:</b>						
Food, industrial uses and seed <sup>4</sup>	210.0	238.9	268.9	236.4	300	235
Exports <sup>5</sup>	50.3	10.0	16.6	19.9	125	
Feed and other uses <sup>6</sup>	2,232.2	2,873.9	2,724.4	2,767.6	2,746	2,365
<b>Total utilization</b>	<b>2,492.5</b>	<b>3,122.8</b>	<b>3,009.9</b>	<b>3,023.9</b>	<b>3,171</b>	<b>2,600</b>
<b>Carry-over at end of year all positions<sup>7</sup></b>	<b>553.5</b>	<b>231.0</b>	<b>315.3</b>	<b>172.9</b>	<b>290</b>	<b>150</b>

<sup>1</sup> Preliminary; subject to change as additional data become available. Estimates for 1947 based on indications in October.

<sup>2</sup> Farm, terminal market, and Government-owned stocks, 1937-41 average. Stocks in all positions, including interior mill, elevator, and warehouse stocks, 1943 to date. Data on interior mill, elevator, and warehouse stocks not available prior to April 1943.

<sup>3</sup> Compiled from reports of the Bureau of Foreign and Domestic Commerce and Bureau of the Census. Imports include grain equivalent of corn meal and flour; exports are grain only.

<sup>4</sup> Utilization in the production of corn meal, flour, hominy and grits for food, starch, sugar, sirup, breakfast foods, alcohol and distilled spirits and for seed in planting the following crop.

<sup>5</sup> Includes corn exports for military relief feeding abroad.

<sup>6</sup> Residual mostly feed.



for 1947-48 is expected to be well above average. It may be about as large as the 19.5 million tons available for feed in 1946-47. Supplies of oilseed cake and meal probably will be a little above last season. The smaller soybean crop this year may cut by about 10 percent the amount of soybean cake and meal available for feed. But the output of cottonseed and linseed cakes and meals will be much larger than last year. These increases will more than offset the slump in soybean cake and meal. On the other hand, supplies of grain byproduct feed may be below last season.

Exports of feed grains in 1946-47 ran to about 5 million tons. They made up nearly one-third of our grain exports. Corn exports were around 125 million

bushels, about 70 percent of all feed-grain exports. Exports of oats totaled about 25 million bushels, barley 18 million bushels and sorghum grains about 25 million bushels. For the new marketing year, total exports of feed grains will be much smaller than in 1946-47. Most of the decrease will be in corn.

Our liberal hay supply is a bright spot in the feed picture. Although a little below the large supplies in some other recent years, it is 15 percent above the supply in the immediate prewar period. With some reduction in hay-consuming livestock in prospect, the supply per hay-consuming animal unit is a little larger than in 1946-47 and is the largest on record.

MALCOLM CLOUGH  
*Bureau of Agricultural Economics*

## Net Income Per Person on Farms

**W**ITH farm income at a new high—both net and gross—farm people as a whole are better off than in many years past. That is not to say, however, that all farmers are in good shape financially—many are not. The income of farm people per capita is much below the average for nonfarmers.

A look at the parity income ratio for recent years shows that the farmers, on the average, are getting along a great deal better than they did before the war. And per capita net income of people on farms is actually well above parity income, as now defined. In 1946 this ratio stood at 168 (1910-14=100), compared with 88 in 1940.

However, net income per person on farms is not only still below the net income per person not on farms, but it has been so every year since the per capita net income series began in 1910, (see accompanying table). Per capita net income of persons on farms in 1946 was only 47 percent as large as per capita net income of persons not on farms. Yet farm people in 1946 had the largest net incomes per capita in history. In prior years the net income per capita of farm people ranged downward to as low as 17 percent of the per capita net income of nonfarm people (in 1921 and 1932). For the whole of the period since 1910 the average per

capita net income of people on farms has been less than half as much as the average for people not on farms. In general, farmers have prospered largely in periods of increasing prices and general prosperity, and have suffered sharply in years of general depression.

The parity income ratio (see table) measures the relation between net income per person on farms and per person not on farms, compared with how they stood in 1910-14. In 1946, as we have seen, the parity income ratio was 168. This means that the net income per person on farms had risen 68 percent more than that of nonfarm people, taking 1910-14 as the starting point for comparison. But per capita net income of people on farms during 1910-14 was much lower than that of nonfarmers. As a result, even the larger incomes of farmers in 1946 did not pull up the average net income of farm people per person to anywhere near that of nonfarmers. The average per capita net income of people on farms was \$134 per year for 1910-14. But people not on farms had \$487 annual income per person in this period. This meant that the net income of people on farms was only slightly more than one-quarter of the net income of people not on farms. Yet the parity income ratio from 1910-14 averaged 100. In other words, dur-

## Farm and Nonfarm Net Income Per Capita

Year	To persons on farms	To persons not on farms	Percent persons on farms to persons not on farms	Parity in- come ratio 1910-14=100
	<i>Dollars</i>	<i>Dollars</i>		
1910.....	139	482	29	105
1911.....	122	468	26	95
1912.....	135	483	28	101
1913.....	136	521	26	95
1914.....	140	484	29	105
1915.....	135	502	27	97
1916.....	155	580	27	97
1917.....	258	640	40	146
1918.....	304	671	45	164
1919.....	319	762	42	152
1920.....	265	878	30	109
1921.....	119	720	17	60
1922.....	153	718	21	77
1923.....	180	815	22	80
1924.....	180	792	23	82
1925.....	223	812	27	100
1926.....	216	858	25	91
1927.....	209	820	25	92
1928.....	222	830	27	97
1929.....	223	871	26	93
1930.....	170	761	22	81
1931.....	114	605	19	63
1932.....	74	442	17	61
1933.....	93	419	22	81
1934.....	111	488	23	83
1935.....	159	540	29	107
1936.....	171	625	27	99
1937.....	167	671	25	97
1938.....	165	622	26	96
1939.....	173	663	26	95
1940.....	177	721	25	88
1941.....	258	853	30	109
1942.....	389	1,060	37	132
1943.....	530	1,259	42	151
1944.....	530	1,326	40	144
1945.....	544	1,314	41	149
1946.....	620	1,326	47	168

ing the base period itself people on farms had only about one-quarter as much net income per person as people not on farms.

During the World War I period, 1914-18, net income to persons on farms gained proportionally and by 1918 it was 45 percent as great as net income to persons not on farms. During the next 3 years the ratio decreased, reaching a low point of 17 percent in 1921. After increasing to 27 percent between 1922 and 1928, it again receded to another low point of 17 percent in 1932. From 1933 to 1940 it fluctuated on a somewhat higher level and has gained in most years since 1940. By 1946, net income of persons on farms was 47 percent of net income of persons not on farms, the highest point of the entire period from 1910-46.

Whether economic equalities between farmers and nonfarmers should, or should not require that the average

net income per person on farms, as now computed, be as large as per capita non-farm income is too large a question for discussion here. There can be many differences of opinion on this score. If it is assumed that the 1910-14 net income relationship between farm and nonfarm people was satisfactory, then people on farms have had a distinct income advantage over nonfarmers since 1941. However, if only net income per capita is taken into account, then farm people today still have a long way to go before they reach economic equality with nonfarmers.

HARRY C. NORCROSS  
*Bureau of Agricultural Economics*

A regional program for forecasting the spread of crop plant diseases will be set up by the United States Department of Agriculture under the Research and Marketing Act of 1946, Administrator E. A. Meyer announced today.

## Fruit and Vegetable Spoilage

**C**OMMERCIAL growers of fresh fruits and vegetables raise their products for the tables of consumers—for people to eat and enjoy as healthful foods.

But from the time fresh produce leaves the farm until it finally reaches the consumer the farmers' produce wastes away at an alarming rate. Of an average truckload of fresh fruit and vegetables leaving the farm, perhaps no more than 80 to 85 percent actually reaches consumers' kitchens.

The farm value of the products wasted probably amounted to about a third of a billion dollars in 1946. This doesn't count the enormous expenses involved in marketing fresh produce which ends in the garbage can.

Adequate data on the full extent of waste and spoilage losses in marketing fresh fruits and vegetables are lacking. The losses occurring between the farm and the retailer are large. And the retailers' losses are heavy. Losses other than these mentioned also occur on the farm and in the consumer's home.

Up-to-date facts on waste and spoilage losses in retail stores are now available. These data given in a recent study by the Bureau of Agricultural Economics both illustrate and emphasize the extent of the over-all losses.

The average rate of loss in retailing fresh fruits and vegetables, as measured in this recent BAE survey, amounted to around 6 or 7 percent of the produce handled. Most of this loss was garbage loss—that is, completely discarded into the garbage can. This represents a huge loss to the country as a whole, considering that domestic consumers paid over 6 billion dollars for fruits and vegetables in 1946. Of this amount, about two-thirds went for fresh produce.

Waste and spoilage losses of fresh fruits and vegetables as a percent of the retail value of produce handled is shown by commodities in the accompanying chart. The commodities are ranked by percentage of loss with the width of each bar proportional to the average importance of that item in the total potential sales. Areas of the bars show the relative importance of spoilage losses by type of loss.

Annual rates of loss for 54 of 65 commodities handled exceeded 5 percent. Items with the highest rates of loss were: persimmons, 45.7 percent; blackberries, 34.3 percent; strawberries, 28.0 percent; brussels sprouts, 26.3 percent; lima beans, 24.6 percent; "face" pumpkins, 23.9 percent; apricots, 21.4 percent; kale, 21.3 percent; escarole, 21.2 percent; and kohlrabi, 20.0 percent.

The average rate of loss on each of the above listed items equals or exceeds 20 percent. Most of them, however, are relatively less important than many other items in the total sales of fresh produce throughout the year.

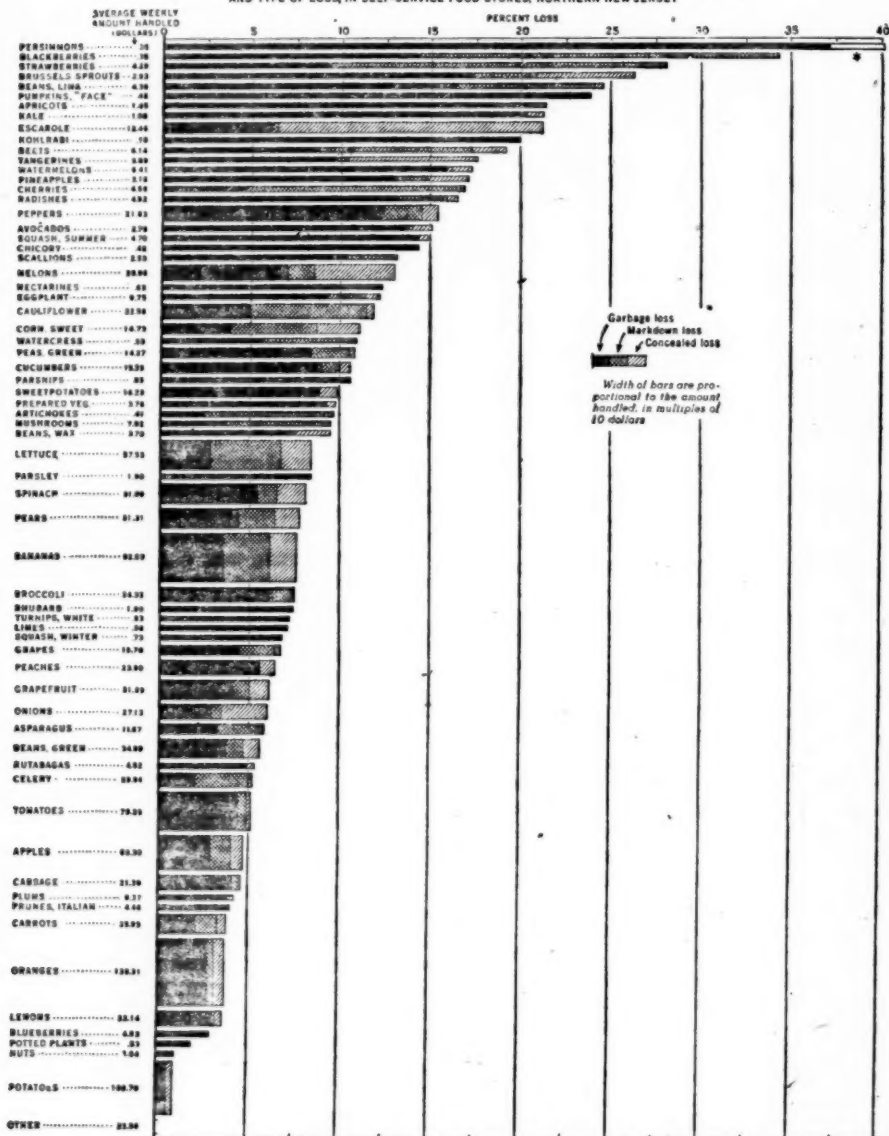
The annual average value of loss by commodities was found to be highest for bananas. Other high loss items in value of losses were oranges, lettuce, tomatoes, melons, peppers, apples, cauliflower, escarole, and spinach. The extent and nature of these losses can be observed in detail for the various commodities in the accompanying chart.

The seasonal variation in total weekly loss rates experienced by these retail stores did not appear to be so great as might be expected. The average weekly loss rate was definitely greater during the second quarter than during the other quarters and the average rate for the first quarter was relatively low—probably because cool weather helped minimize waste and spoilage. On the other hand, the relatively higher losses during the second quarter apparently can be attributed to the fact that fruits in the retail stores seem to break down more rapidly during these months—probably because many of them have been held in storage for a considerable time. Then too, highly perishable items, such as blackberries and strawberries appear on the market in sizable quantities during this second quarter. The volume of produce handled during April, May, and June was somewhat less than that handled during other quarters of the year because the market supply of some important commodities, such as stored fruits, were limited and because "summer vegetables" were not yet on the market in volume.

Concealed losses (present at store arrival), averaged around 1 percent of the total retail value of the produce handled, although they were lower during the fourth quarter probably because of the absence of stored produce on the market.

Garbage losses (complete spoilage in the store) were low during the first quarter chiefly because of favorable weather. They were relatively high during the second quarter for reasons mentioned above and varied little during the third and fourth quarter.

WASTE AND SPOILAGE LOSS OF FRESH FRUITS AND VEGETABLES, DECEMBER 1945 - NOVEMBER 1946  
AVERAGE WEEKLY LOSS OF PRODUCE, HANDLED IN BULK AND NONREFRIGERATED, BY COMMODITIES  
AND TYPE OF LOSS, IN SELF-SERVICE FOOD STORES, NORTHERN NEW JERSEY



\* PERSIMMONS: GARBAGE LOSS 37.1, MARKDOWN LOSS 5.7, CONCEALED LOSS 2.0 (PERCENT)



**Mark-down losses** (price reductions due to deterioration) did not vary much during the different quarters, although they were somewhat smaller during the spring and summer. Rapid deterioration during warmer months would normally shorten the time in which produce could be moved at reduced prices before it became unsalable.

The average weekly loss rate on vegetables amounted to 8.5 percent compared with a 6.6 percent rate on fruits. The seasonal loss rate on fruits showed some variation. The rate was only 5.4 percent during the first quarter in contrast to the fairly high rate of 9.0 percent during the second quarter. The loss rates on fruit for both the third and fourth quarters amounted to approximately 6.5 percent. The garbage loss on fruit was exceptionally low during the first quarter.

The average loss on perishable vegetables was relatively high throughout the year but was somewhat lower during the winter quarter.

The average loss on so-called hardware vegetable items (the less perishable vegetables) such as potatoes, was fairly uniform throughout the year, although the third quarter rate was somewhat below average.

The fruit and perishable vegetable groups each accounted for approximately 43 percent of the total produce handled, with the hardware vegetable items accounting for most of the remaining 14 percent. During the 4th quarter however, nearly half of the produce handled was fruits. Both perishable and hardware vegetables accounted for the rest. The difference in distribution rates in this quarter apparently was caused by the end of the production of summer vegetables and the influx of sizable quantities of fall fruits.

Observations were made in the BAE survey to learn the extent of waste and spoilage losses of bulk produce in two stores in which mechanically refrigerated display cases were used. Waste and spoilage losses were significantly lower in these refrigerated stores—the average loss amounted to 2.7 percent.

For comparable months the average waste and spoilage loss rate in the bulk stores without refrigeration was 6.5 percent.

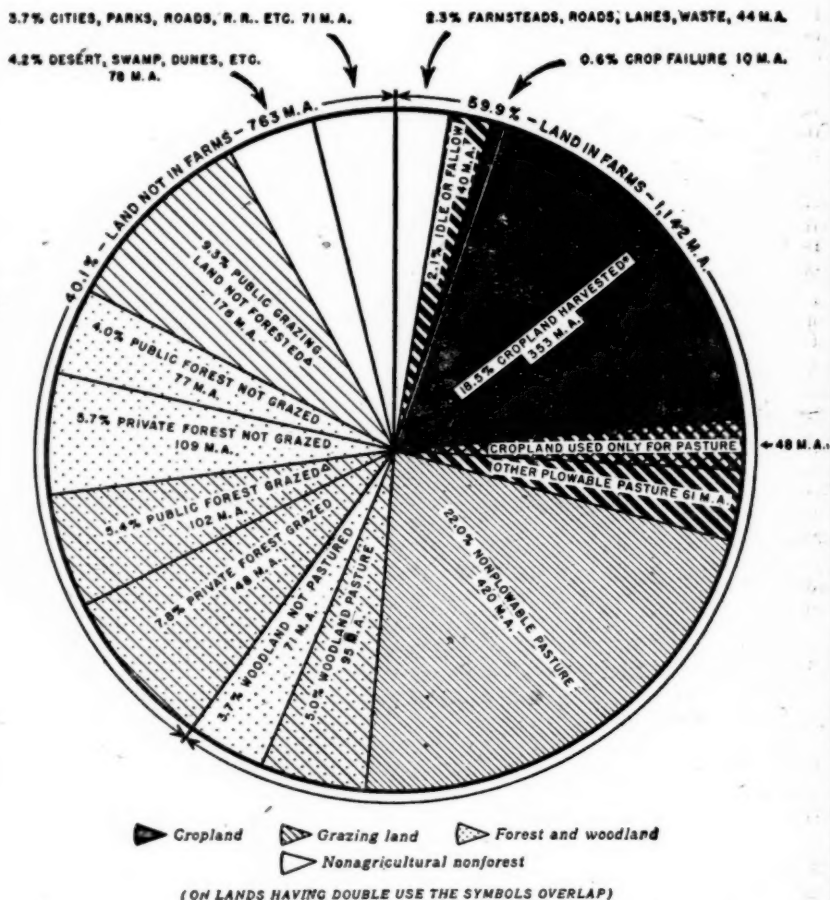
The value of refrigeration also is indicated by comparing the weekly average loss rates in refrigerated stores with those in nonrefrigerated stores. The weekly average loss rates in the 2 stores equipped with refrigerated cases were 2.2, 5.6, 2.0, and 2.1 percent for the weeks ending April 13 and June 15, 1946, and February 1 and February 8, 1947. Weekly loss rates observed in nonrefrigerated stores were 6.3 and 7.1 percent in two conventional-type nonrefrigerated stores for the week ending January 19; 3.3 and 5.2 for the week ending February 16, 7.9 and 8.1 for the week ending May 18; and 7.7 and 9.6 for the weeks ending June 22 and June 29, 1946.

Among the most important perishable vegetables, the loss rate in the refrigerated items was, in nearly every instance, significantly lower than in the nonrefrigerated items. The average loss rate on lima beans was considerably less in the refrigerated stores, although it was still rather high in relation to other items. The average spoilage rate on eggplant, kale, sweet corn, beets, radishes, peppers, celery, rhubarb, summer squash, green beans, lettuce, cauliflower, prepared vegetables, cucumbers, tomatoes, cabbage, and green peas was definitely lower in stores equipped with refrigerated cases. Savings in waste due largely to refrigeration were most apparent in the large-volume items such as tomatoes, lettuce, green beans, and celery. In a few cases, particularly asparagus and spinach, the spoilage rate averaged greater in the refrigerated stores than in the nonrefrigerated stores. The reason for these exceptions is not known. They may have been due to differences in quality of the merchandise or to other factors on which further research would be helpful. On the whole, however, spoilage losses on the highly perishable commodities in the refrigerated stores were markedly lower.

DONALD R. STOKES  
*Bureau of Agricultural Economics*

# MAJOR USES OF LAND IN THE UNITED STATES

1945



PERCENTAGES SHOWN IN LARGE CIRCLE ARE OF TOTAL LAND AREA OF THE NATION

M. A. = MILLION ACRES

\* CROPLAND ACREAGES ARE FOR 1944

▲ ADDITIONAL PUBLIC GRAZING AND FOREST LANDS ARE INCLUDED IN THE LAND REPORTED IN FARMS

## The Nation's Land Resources

**T**HE LAST few years have seen great changes in the use of our land resources. The output of farms and ranches each year since 1940 has averaged a fifth above 1931, the pre-drought peak, and over a third above 1920.

Farmers since 1941 have been growing record amounts of most crop and livestock products. They have done this job without much increase in their acreage of crop pasture, and grazing land.

It is well at this time to take stock of our land and see what we are using it for. About 60 percent of the land of this country (continental) is under farm ownership or lease, as reported by the 1945 Census of Agriculture. This includes 451 million acres in cropland, 481 million acres in pasture besides cropland or woodland pastured, and 166 million acres of farm woodland.

Altogether, more than half of our land area is used or available for pasture for farm and range livestock. All classes of pasture in farms and ranches amounts to 624 million acres.

Nonforested grazing land outside farms is represented by 178 million acres, mostly of native grasses and shrubs, and in public ownership. About 250 million acres of the more open and accessible forest land in publicly and privately owned timber tracts are also used for grazing purposes.

The total forest and woodland area is about 624 million acres. This acreage includes about 163 million acres in mountainous or arid woodland. Forest-producing land occupies 461 million acres. Parks, military reservations and similar installations include 22 million acres of the total forest and woodland area.

Crop, pasture, grazing, and forest uses add up to slightly over 1,700 million acres, or 90 percent of the land area of the country. Of the remaining 10 percent, 71 million acres are occupied by cities, parks, roads and similar uses and 44 million acres by farmsteads, roads, lanes, and farm wasteland. The 78 million acres of desert, rock outcrop, tidal marshlands and coastal beaches are of slight agricultural value. These areas have some usefulness for wildlife protection and as recreational sites.

Less than one-fifth of the Nation's land area provides, directly as food-stuffs or fibers or indirectly as feed and forage for livestock, most of the agricultural products which go to meet our needs. The 350 million acres, more or less, from which crops have been harvested in recent years represent about two and one-half acres per capita. The 200 or more crops grown include all of the major crops except certain tropical and subtropical commodities. About two-thirds of the acreage of crops harvested, and an even larger part of the tonnage goes to provide feed for livestock. One-fifth of the acreage is utilized for growing wheat, rice and similar crops, staples in the diet of a large proportion of the population of the world. About one-tenth of an acre per capita is used to produce fruits and vegetables. The fiber, oil-producing and other crops account for the remaining one-tenth of the acreage of harvested crops.

Land in crops on the level, productive land of the Corn Belt is at an all-time peak. There has been a net reduction of more than 30 million acres in the two intertilled crops, corn and cotton, in the past quarter century.

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The actual shift of these crops from poorly adapted fields probably exceeds 50 million acres for the period. In most instances, vacated farms have been bought or rented by neighboring farmers for expanding crop operations. In many cases, vacated farms on poorer land are remaining idle or being used for pasture.

The reserve of cropland on the Nation's farms makes up another 150 million acres. Annual losses from 1941 through 1946 of crops planted or seeded and failing to be harvested were at a minimum expectancy of about 10 million acres. An additional 30 to 50 million acres of cropland are idle or fallow during most seasons. The greatest changes from year to year in the amount of land in this class come in the Great Plains, where the proportion of the land in alternate summer fallow varies with prospects for rainfall and a grain crop. Included in the class of temporarily idle land are crop fields that cannot be kept in continuous use for crops and a varying quantity of other land. About 100 million acres of tillable land are used for pasture each year. In some instances, land highly suited for crops is reserved for permanent or rotation pasture lots. In many other instances, this tillable pasture is suited only to an occasional year or two of use for crops.

The 1,052 million acres of pasture and grazing land being used or available for use provide low-cost forage sufficient to meet about a third of the feed and forage requirements of farm and ranch livestock. Many of the grasses and other forage plants have the added protective value of stabilizing hilly and loose soils and retarding run-off and wind erosion. An estimated 707 million acres of pasture and grazing land are nonforested, but less than 15 percent is adapted to use for crops. This acreage, with the 325 million acres of farm woodland and non-farm forest land that is grazed, makes up about 950 million acres of dry, steep, rough, poor, or swampy land. Changes in consumers' food habits during the past three decades have increased the value of this pasture resource, but pasture improvement, despite gains through reseeding, use of fertilizers and application of soils and

moisture stabilizing measures in recent years, remains an important but largely undeveloped field.

Our acreage of pasture and grazing land has changed little during the past 25 years. The 159 million acres added since 1930 to the pasture acreage reported in farms represent only minor gains to acreage not previously grazed. Shifts since 1930 from crops to pastures on the hilly and erosive land extending from southern Iowa to eastern Texas have about offset losses during the 1920 period of farm abandonment in eastern United States.

Forests yield a crop on rough, stony, swampy, or sandy land which will not produce crops or pasture. The qualities that enable forest species and other woody plants to withstand the daily and seasonal extremes of the weather add to their protective value, as soils and moisture stabilizers, moderators of downstream floods and as regulators of the water available for irrigation.

The area of forest-producing land at the present time is only 56 percent of the 820 million acres of the originally forested area. Only about one-tenth, concentrated in the Western States, is old growth. About two-thirds is in stocks of saw and pole timber dimensions. The remainder represents seedlings and saplings and poorly restocked and denuded areas in about a 50-50 ratio. The tremendous recent drain upon the Nations forests has almost exhausted reserves. Future dependence, as upon crops and pastures but over long-time growth interval, must be placed upon present and prospective increment.

CLAUDE C. HAREN  
*Bureau of Agricultural Economics*

## Florida Storm

**H**EAVERY crop damage was caused by the September hurricane in Florida. Important acreages of fall vegetables were in the path of the storm. Rain and wind damage to these crops was severe. Citrus fruits in the path of the hurricane were also heavily damaged, but the full force of the storm missed the principal citrus area.



## Prices Reach New Highs

**S**HARP gains in prices of meat animals, dairy and poultry products, and grains lifted the index of prices received by farmers to a new high of 286 percent of the 1909-14 average, the Bureau of Agricultural Economics reported. The increase of 4 percent over last month is the sharpest monthly rise since last March. The index on September 15 was 18 percent above a year ago, and 22 percent higher than the post World War I high, 235 in May 1920.

Prices paid by farmers, including interest and taxes, rose about one percent from a month earlier, reaching a new high of 237. This is 18 percent above a year ago and 17 percent higher than the peak of 202 reached in 1920 after the first world war.

As a result, the parity ratio (average relation of prices received to prices paid, interest, and taxes) rose to 121, which is well below the all-time high of 132 set in October 1946, but is above the high of the World War I period, which was 118 reached in 1917 and 1918.

Prices of meat animals, especially hogs, caused much of the increase in the prices-received index. Higher dairy products prices—butter, butterfat, and wholesale milk—were a close second. Eggs, wheat, and corn also made substantial contributions to the increase in the index. Hog prices rose 11 percent during the month, and those of corn and wheat 10 and 16 percent respectively. Farmers were receiving 12 percent more for eggs than a month ago and 15 percent more for butterfat. Cotton and vegetable prices were lower, partly offsetting the increases.

The rise in the index of prices paid resulted primarily from higher feed prices—led by corn and corn products—and from higher food, clothing, and building-material prices which more than offset decreases in several other groups of commodities bought by farmers.

Prices received by farmers for meat animals went up during the month. Hogs led the rise with an increase from August of \$2.80 per hundredweight. Price increases were substantial in all important hog areas. Prices for most classes of beef cattle went somewhat

higher. However, marketings of cows were heavy, and average returns from all cattle sold by farmers were only slightly changed. Prices of veal calves climbed from \$20.80 per hundredweight in August to \$21.70 in mid-September.

Lamb prices moved up from \$21.00 in August to \$21.60 in mid-September. Gains in both lamb and veal prices occurred in nearly all parts of the country. Sheep prices made small gains.

Farmers' prices of all dairy products continued to advance at greater than seasonal rates during the month, pushing the index for this group to 282 on September 15. This was 9 percent above a month earlier and 4 percent above a year earlier. A 10.7-cent rise in butterfat prices during the month led the increase. Butter production continued relatively low. Wholesale prices of butter at Chicago and New York decreased appreciably, however, since mid-September. Wholesale milk prices rose 24 cents from the price of \$4.11 per 100 pounds for August, but were still 34 cents below the prices received a year ago during the period of adjustment which followed the discontinuance of dairy production payments and price control.

A 33-cent increase in the price of wheat was responsible for most of the rise in the index of food grains during the past month. Rye increased 37 cents during the same period, but rice was bringing 33 cents less per bushel than a month ago as new crop movement increased. Wheat, bringing farmers an average of \$2.43 per bushel, was at the highest level since July 1920 except for March 1947.

Prices of all poultry products were sharply higher, spurred upward by increased demand resulting from high price of meats. The price received by farmers for a dozen eggs increased 5.5 cents to average 53.0 cents per dozen nationally. Live turkeys were 3 cents a pound higher and chickens 1 cent above a month ago. As a result of these increases the index rose 22 points to 246 percent of its 1909-14 average, the highest September level of record. This is 8 percent higher than the pre-



# Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39 = 100) <sup>1</sup>	Income of industrial workers (1935-39 = 100) <sup>2</sup>	1910-14=100					Index of prices received by farmers (August 1909-July 1914=100)			
			Average earnings of factory workers	Whole-sale prices of all com. modities <sup>3</sup>	Prices paid by farmers		Farm wage rates <sup>4</sup>	Livestock and products			
					Com-modities	Com-modities, interest, and taxes		Dairy products	Poul-try and eggs	Meat ani-mals	All Hve-stock
1910-14 average	58	50	100	100	100	100	100	100	101	101	101
1915-19 average	72	90	152	158	151	150	148	148	154	163	158
1920-24 average	75	122	221	160	161	173	178	159	163	123	142
1925-29 average	98	129	232	143	155	168	179	160	155	148	154
1930-34 average	74	78	179	107	122	135	115	105	94	85	93
1935-39 average	100	100	199	118	125	128	118	119	109	119	117
1940-44 average	192	234	325	139	150	147	212	162	146	171	164
1945 average	203	250	403	154	180	174	350	197	196	210	203
1946 average	170	270	391	177	203	194	378	242	198	256	240
1946											
September	180	262	404	181	210	200	-----	271	221	249	250
October	181	293	408	196	218	207	378	300	257	318	299
November	182	298	409	206	224	212	-----	307	230	313	294
December	182	305	417	206	225	213	-----	312	226	311	294
1947											
January	188	308	419	207	227	215	399	292	201	306	281
February	190	309	421	218	234	221	-----	270	192	319	278
March	189	313	425	216	240	227	-----	269	199	345	292
April	187	309	423	215	243	230	397	257	204	331	282
May	185	313	432	216	242	229	-----	241	203	327	275
June	184	318	440	220	244	231	-----	233	205	338	278
July	177	312	426	224	244	231	404	244	220	343	286
August	182	-----	-----	-----	249	235	-----	258	224	319	295
September	-----	-----	-----	-----	252	237	-----	282	246	367	315

Year and month	Index of prices received by farmers (August 1909-July 1914=100)								All crops and live-stock	Parity ratio <sup>1</sup>
	Crops									
	Food grains	Feed grains and hay <sup>2</sup>	To-bacco	Cotton	Oil-bearing crops	Fruit	Truck crops	All crops		
1910-14 average	100	101	102	96	98	99	-----	99	100	100
1915-19 average	103	164	187	168	187	125	-----	168	162	106
1920-24 average	147	126	192	189	149	148	143	160	151	86
1925-29 average	140	119	172	145	129	141	140	143	149	89
1930-34 average	70	76	119	74	72	94	166	86	90	66
1935-39 average	94	95	175	83	106	83	102	97	107	84
1940-44 average	123	119	245	131	159	133	172	143	154	103
1945 average	172	161	366	171	215	226	224	201	202	116
1946 average	201	195	382	228	244	226	204	226	233	120
1946										
September	207	221	396	285	236	210	154	236	243	122
October	218	222	410	304	255	208	151	244	273	132
November	220	187	399	236	342	186	207	220	263	124
December	224	186	406	242	334	211	166	232	264	124
1947										
January	223	184	399	240	336	196	238	236	260	121
February	235	185	390	246	334	203	275	245	262	119
March	263	212	390	257	360	215	299	266	280	123
April	277	223	387	260	358	223	295	269	276	120
May	276	218	390	270	326	222	286	268	272	119
June	253	240	390	275	318	228	215	262	271	117
July	251	253	390	289	314	215	189	263	276	119
August	246	270	383	267	308	177	211	255	276	117
September	278	297	352	252	311	181	179	254	286	121

<sup>1</sup> Federal Reserve Board represents output of mining and manufacturing; monthly data adjusted for seasonal variation.

<sup>2</sup> Computed from data furnished by Bureau of Labor Statistics and Interstate Commerce Commission on pay rolls in mining, manufacturing, and transportation; monthly data adjusted for seasonal variation. Revised April, 1947.

<sup>3</sup> Bureau of Labor Statistics.

<sup>4</sup> Monthly data adjusted for seasonal variation.

<sup>5</sup> Ratio of prices received to prices paid for commodities, interest, and taxes.

<sup>6</sup> 1924 only.

vious September record established in 1920.

Led by a 21-cent increase in the price of corn to a new record high of \$2.40 per bushel, the index of feed grain prices rose 33 points during the month to another record of 346 percent of its 1909-14 average. Increases in other feed grains during the month were also sizable, barley increasing 17 cents per bushel, oats 13 cents, and grain sorghums 43 cents per hundred pounds. Hay prices advanced 80 cents per ton since August 15.

The index of prices received by fruit growers for all fruits rose 4 points during the month ended September 15 to 181 percent of the 1909-14 average. This was 29 points below a year ago.

Prices being received by farmers for cotton lint decreased for the second successive month and at 31.21 cents per pound averaged 4.1 cents below a year ago.

The general level of truck crop prices fell sharply from August to September,

despite substantially higher prices for green peas, snap beans, spinach, and cauliflower. At 179, the index September 15 was 32 points lower than a month earlier but 25 points above a year ago and is higher than for any other September except 1943.

Prices paid by farmers rose during the month to 252 percent of the 1910-14 average—another new high. Record farm incomes and the unprecedented demand for items bought by farmers, together with smaller supplies of some products, continued to lift the rural retail commodity price level.

This increase added less than one percent this month to the index of prices paid, interest, and taxes. That index now stands at 237, which is 18 percent above a year ago.

More divergence appeared in the movement of prices paid by farmers during the month ended September 15 than has occurred for some time. Feed prices rose 7 percent. On the other hand, seed prices were down 5 percent

### Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State]

Commodity	5-year average		Sept. 15, 1946	Aug. 15, 1947	Sept. 15, 1947	Parity price, Sept. 15, 1947
	August 1909-July 1914	January 1935-December 1939				
Wheat (bushel).....dollars	0.884	0.837	1.79	2.10	2.43	2.10
Rye (bushel).....do	.720	.554	1.91	2.11	2.48	1.71
Rice (bushel).....do	.813	.742	1.84	2.71	2.33	1.93
Corn (bushel).....do	.642	.691	1.73	2.19	2.40	1.52
Oats (bushel).....do	.399	.340	.747	.948	1.08	.946
Barley (bushel).....do	.619	.533	1.34	1.61	1.78	1.47
Sorghum, grain (100-pound).....do	1.21	1.17	2.58	2.86	3.29	2.87
Hay (tons).....do	11.87	8.87	15.40	15.30	16.10	28.10
Cotton (pound).....cents	12.4	10.34	35.30	33.15	31.21	29.39
Cottonseed (ton).....dollars	22.55	27.52	57.80	75.50	75.60	53.40
Soybeans (bushel).....do	1.96	.954	2.13	3.07	3.05	3.28
Peanuts (pound).....cents	4.8	3.55	8.91	9.81	10.0	11.4
Flaxseed (bushel).....dollars	1.69	1.69	13.78	5.73	6.18	4.01
Potatoes (bushel).....do	4.697	.717	1.27	1.61	1.49	1.77
Sweetpotatoes (bushel).....do	.878	.807	2.24	2.70	2.40	2.08
Apples (bushel).....do	.96	.90	2.37	2.05	2.41	2.28
Oranges on tree (box).....do	2.29	1.11	3.01	1.86	1.31	3.62
Hogs (hundredweight).....do	7.27	8.38	16.10	24.40	27.20	17.20
Beef cattle (hundredweight).....do	5.42	6.56	13.80	20.00	20.20	12.80
Veal calves (hundredweight).....do	6.75	7.80	15.20	20.80	21.70	16.00
Lambs (hundredweight).....do	5.88	7.79	15.70	21.00	21.60	13.90
Butterfat (pound).....cents	26.3	29.1	75.6	73.3	84.0	61.9
Milk, wholesale (100 pound).....dollars	1.60	1.81	4.69	4.11	4.35	3.90
Chickens (pound).....cents	11.4	14.9	29.3	26.9	27.9	27.0
Eggs (dozen).....do	21.5	21.7	44.5	47.5	53.0	54.1
Wool (pound).....do	18.3	23.8	42.1	40.0	40.6	43.4

<sup>1</sup> Revised.

<sup>2</sup> Comparable base price, August 1909-July 1914.

<sup>3</sup> Comparable price computed under sec. 3 (b) Price Control Act.

<sup>4</sup> 1919-28 average of \$1.12 per bu. used in computing parity.

<sup>5</sup> 1919-28 average for computing parity price.

<sup>6</sup> Adjusted for seasonality.

from the level prevailing during the spring selling season. Furniture, furnishings, and household supplies also declined somewhat. But a substantial rise in feed prices, together with upturns in prices of food, clothing, and farm supplies more than offset these declines. On a 1919-29 base, the prices paid index was 158 in mid-September; with 1935-39 averages representing 100, it was 202.

Prices of all feed items were higher than in August and substantially above September 1946. Corn advanced 10 percent to a new peak. September 1 crop prospects pointed to a 25-percent smaller corn crop than a year ago. The rise in corn prices contributed more to the increase in the prices-paid index than any other one commodity. Reflecting below-average corn crop prospects gluten feed prices also were up 11 percent. Alfalfa hay prices rose about eight percent during the month. Corn meal prices rose about seven percent. Price advances for most other feed items were consistently about four percent. Bran, at \$3.73 per 100 pounds, was 22 percent higher than a year ago, but the price of middlings was up 34 percent from a year ago. At 285, the mid-September feed index was up 7 percent from a month earlier, and 23 percent over a year ago.

Rural living costs reached a new high level on September 15. Although furniture and household supplies declined somewhat, upturns in prices paid by farmers for food, clothing, and building materials lifted the index covering items bought for family maintenance to 258 percent of their 1910-14 average in mid-September. This was less than one percent higher than a month earlier, but 19 percent higher than a year ago. During the inflationary period following World War I, the index rose to 222 percent of its 1910-14 base.

Producers' prices for eggs the rest of 1947 will be much above last year. Prices in this period may exceed all other years except 1919 and 1920. In addition to a continuation of a high level of consumer income, moderately smaller egg supplies and continuing high meat prices are likely to strengthen egg prices.

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